

REMARKS

Claims 1 and 3-8 are pending. No new matter has been added by way of the present amendment. For instance, claim 1 has simply been amended to include the common names of the recited compounds as suggested by the Examiner. Thus, no new matter has been added.

In view of the following remarks, Applicants respectfully request that the Examiner withdraw all rejections and allow the current pending claims.

Issues Under 35 U.S.C. § 103(a)

The Examiner has rejected claims 1 and 3-8 under 35 U.S.C. § 103(a) as being obvious over SCHOOR (U.S. Patent No. 2,976,296), XP-002274262 anonymously disclosed "combination of microbicides for improved plant protection in pomefruit" (IDS reference filed on Jan. 13, 2006), BOSSELAERS et al., (U.S. Patent No. 6,174,911), and HOLMWOOD et al., (EP040345A). Applicants respectfully traverse this rejection.

The four references cited by the Examiner simply establish that the compounds recited in the present claims are known fungicides. For instance, U.S. '296 discloses dithianon (which corresponds to the compound of formula (I) of the present invention). The XP-002274262 reference discloses a combination of a particular compound (compound A), which does not apparently correspond to any of the presently claimed compounds. However, XP-002274262 discloses that Compound A may be combined with one or more commercially marketed fungicides. One of these commercially marketed fungicides is dithianon. U.S. '911 discloses the use of epoxiconazole as an anti-fungal compound, which corresponds to the compound of formula II-2 of the present invention. Lastly, EP '345 teaches tebuconazole as a fungicide, which corresponds to the compound of formula II-4 of the present invention.

Without relinquishing any argument that the presently claimed compounds would not be obviously combined, Applicants again stress that patentability of the present invention can at least rest upon the synergistic results provided in the specification. Unfortunately, the Examiner contains to maintain that the present invention fails to demonstrate synergistic results. For

instance, at page 6, line 13 of the outstanding Office Action, the Examiner wrongly reasserts, that synergism has not been shown for all the claimed ratios (16:1 to 1:4, and not 4:1):

To support this argument the Examiner sets out an analysis of the data provided in the specification (see Office Action page 8) without due consideration of Applicants' arguments and Declaration of record. However, Applicants believe these efforts to be unsuccessful and failed due to the Examiner's incorrect reading of the numbers recited in the specification. In the following discussion, Applicants address the Examiner's analysis, step by step.

1. Combination of dithianon and epoxiconazole (I + II-2), examples 33-36:

Example 33 contains dithianon (I) at conc. 4 ppm (individual efficacy 0%) and epoxiconazole (II-2) at conc. 0.25 ppm (individual efficacy 63%). However, the Examiner wrongly assumes that the epoxiconazole is used at a conc. of 1 ppm (individual efficacy 75%; line 6 of page 8 of Office Action). Therefore, the Examiner draws the wrong conclusion that the observed efficacy of the combination is the same as for the individual components. In fact, observed efficacy of 75% is well above the individual efficacy of 63% and also above the "calculated" efficacy determined using Colby's formula (Specification page 8, lines 22 to 38). Therefore, this example is indicative of a synergistic response.

In addition, Applicants refer to the Declaration of record in which states: "even small differences between observed efficacy and calculated efficacy are significant. This is particularly the case when a presumable small difference in efficacy results in a significant. This is particularly the case when a presumable small difference in efficacy results in a significant reduction of the observed fungal infection level compared to the infection level based on the calculated efficacy". In this 33, the fungal infection level observed is 20% while the calculated level would be 50% higher, that means 30% (calculated using the Abbot's formula [cf. Specification page 8, lines 10 to 16] in analogy to Example 36 provided on page 2 of the Declaration).

Example 34 contains dithianon (I) at conc. 1 ppm (individual efficacy 0%) and epoxiconazole (II-2) at conc. 0.25 ppm (individual efficacy 63%). Based on the incorrect assumption that epoxiconazole is used at a conc. of 1 ppm (individual efficacy 75%), the Examiner repeatedly draws the wrong conclusion that the observed efficacy of the combination is the same as the individual components. However, observed efficacy of 75% is as much above the individual/calculated efficacy of 63%. Therefore, example 34 is also indicative of a synergistic response.

The very same analysis applies to Example 35 (ratio 1:1, observed efficacy of 75%) containing dithianon (I) at conc. 0.25 ppm (individual efficacy 0%) and epoxiconazole (II-2) at conc. 0.25 ppm (individual efficacy 63%) which is indicative of a synergistic response.

Example 36 contains dithianon (I) at conc. 0.25 ppm (individual efficacy 0%) and epoxiconazole (II-2) at conc. 1 ppm (individual efficacy 75%). Here, the Examiner wrongly asserts that the observed efficacy of the combination is not “very different” from the individual components, although the observed efficacy of 88% is much above the individual or calculated efficacy of 75%. In this context, the Examiner must give the credit to arguments of record as well as the Declaration of record. Both contain strong and persuasive arguments concerning the synergistic action shown by the Example 36.

Again, the Declaration of record states: “even small differences between observed efficacy and calculated efficacy are significant. This is particularly the case when a presumable small difference in efficacy results in a significant reduction of the observed fungal infection level on compared to the infection level based on the calculated efficacy”. Concerning Example 36 the Declaration elaborates: “Thus, example 36 shows that the mixture (I + II-2) at the test ratio reduced the expected (calculated) fungal infection level from about 20% by a factor of 2 to the observed infection level of 10%. This reduction is strong and regarded as a significant difference in the field of screening of fungicidal substances”.

In the abovementioned Office Action, the Examiner has not provided any substantial arguments against this analysis based on S.R. Colby, Weeds 15, 20-22 (1967). If the Examiner

has personal knowledge indicating that the use of Colby or Abbott's formula are incorrect, Applicants invite the Examiner to provide some rationale therefore. Indeed, if the Examiner is relying upon personal knowledge to support the finding of what is known in the art, the Examiner is respectfully requested to provide an affidavit or declaration setting forth specific factual statements and explanations to support such a finding. In this regard the Examiner is referred to 37 C.F.R. §1.104(d)(2). Moreover, the Examiner is respectfully requested to refer to *In re Zurko*, 59 USPQ2d 1693, 1697 (Fed. Cir. 2001) (holding that general conclusions concerning what is "basic knowledge" or "common sense" to one of ordinary skill in the art without specifying factual findings and some concrete evidence in the record to support these findings will not support an obviousness rejection).

It can thus be seen that all four examples 33 to 36 provide data indicative of unexpected synergistic action of the mixture I + II-2 for the entire tested range of ratios from 16:1 to 1:4. In addition, Examples 11 to 16 (see specification page 9 to 10) provide further compelling evidence for synergistic action of all claimed ratios. These examples show that the observed efficacy (between 29 and 59%) in each case was much higher than the calculated efficacy of 9%.

2. Combination of dithianon and tebuconazole (I + II- 4), examples 37-41:

Example 37 contains dithianon (I) at conc. 4 ppm (individual efficacy 0%) and tebuconazole (II-4) at conc. 0.25 ppm (individual efficacy 0%). The Examiner wrongly assumes that tebuconazole is used at a concentration of 1 ppm at a wrongly transcribed individual efficacy of 75% (see Office action page 8, line 15). But, the individual efficacy at 1 ppm tebuconazole is 63% (see Specification page 11, line 19). Again, the Examiner draws the wrong conclusion that the observed efficacy of the combination is the same as the individual components. However, the observed efficacy of 75% is significantly higher than the individual/calculated efficacy of 0%. Therefore, example 37 is strongly indicative of a synergistic response. The same analysis applies to the other Examples 38 to 41 resulting in unexpected synergistic data for the entire range of ratios: 16:1, 4:1, 1:1 and 1:4.

In addition, Examples 17 to 22 (Specification page 10) provide further compelling evidence for synergistic action of the mixture I + II-4 for the full range of ratios of 16:1 to 1:4. These additional examples show that the observed efficacy (between 19 and 59%) in each case was much higher than the individual efficacy of both mixture components or the calculated efficacy of 0%.


Despite the Examiner's repeated inspection of the experimental data, for both mixtures and the complete range of ratios as claimed (16:1 to 1:4), all use examples continue to show that the observed efficacy was higher compared to the expected efficacy and against all tested fungal pathogens (Specification pages 9 to 12, Examples 11-22, 33-41). Thus, these examples showing a synergistic response are indicative of non-obviousness of the present invention.

In view of the above, Applicants respectfully submit that the present claims relate to allowable subject matter. The Examiner is respectfully requested to withdraw all rejections of the record and pass the present application to allowance. Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Craig A. McRobbie, Reg. No. 42,874 at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.14; particularly, extension of time fees.

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Respectfully submitted,

By 

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